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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,584	07/31/2001	Jin-Shan Wang	82817HEC	1795

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,584

Applicant(s)

WANG ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 and 10-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The rejection is adequately set forth in paragraph 4 of the office action mailed 9/21/04 and is incorporated here by reference.

Response to Arguments

3. Applicants' arguments filed 11/12/04 have been fully considered but they are not persuasive.

Previously, the examiner had argued that the phrase "water-soluble" hyperbranched polymeric dye comprising a hyperbranched polymer having a dye chromophore and a "hydrophilic group" incorporated into the polymer base chain failed to satisfy the written description requirement under 35 USC 112, first paragraph.

In response, applicants argue that the term “hydrophilic group” as well as the now specifically recited hydrophilic groups are supported by the chemical structures on pages 6, 8, and 9 of the present specification. Applicants also argue that the base chain of the polymers that comprise the hyperbranched polymers, i.e. polyamide, polyester, polyether, vinylic polymer, polyimide, polyesteramide, and polyurethane, include the hydrophilic groups.

However, polyamide, polyester, polyether, vinylic polymer, polyimide, polyesteramide, and polyurethane do not intrinsically contain hydrophilic groups in their base chain and are not necessarily hydrophilic in and of themselves. That is, polyurethane, polyester, etc. are not inherently water-soluble polymers. For example, polyester contains ester group in the backbone while the polyester is made by reacting carboxylic acid and alcohol. However, the hydrophilic carboxylic acid necessarily loses its hydrophilicity when the polyester linkages are formed. Similarly, polyamide is made by reacting carboxylic acid and amine. However, the hydrophilic carboxylic acid necessarily loses its hydrophilicity when the polyamide linkages are formed. Thus, while the presently claimed polymers may be made from hydrophilic components, these components lose their hydrophilicity when the polymer linkages are formed and thus, the polymers themselves are not hydrophilic or water-soluble and do not contain hydrophilic groups in their base chain. Applicants argue that incorporating a hydrophilic group into a polyurethane base chain would produce a water-soluble polyurethane. However, while it is agreed that explicitly inserting a hydrophilic group into a polyurethane would result in a water-soluble polyurethane, there is no support in the present specification for such introduction. Further, it does not appear that polyurethane intrinsically possesses such hydrophilic groups in its backbone. That is, given that polyurethane is produced by reacting $R_1\text{CNO} + R_2\text{OH} \rightarrow$

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$R_1NHCOOR_2$, there does not appear to be any hydrophilic groups present in the urethane base chain.

Further, present claim 1 now recites specific hydrophilic groups. However, it does not appear that all the recited groups are in fact hydrophilic. For instance, ether group and substituted amide do not appear to be hydrophilic. Additionally, it is not clear which of the recited polymers of the present invention, i.e. polyamide, polyester, polyether, vinylic polymer, polyimide, polyesteramide, and polyurethane, would possess quaternary amine groups in its base chain.

As support for recitation that the hyperbranched polymers contain hydrophilic groups in their base chain, applicants point to pages 6, 8, and 9 of the present specification. However, page 6 describes substituents for components that react to form the polymers not the polymers themselves. As stated above, while a polymer may be prepared from hydrophilic components, this does not mean that the polymer contains hydrophilic group in its base chain. Further, it is not clear where in the base chains of the structures set forth on pages 8 and 9 the hydrophilic groups are found. Clarification is requested.

In light of the above, it is the examiner's position that the 35 USC 112 rejection of record remains applicable against the present claims.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

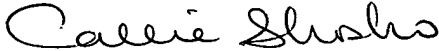
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Callie E. Shosho
Primary Examiner
Art Unit 1714